

REMARKS

Applicant acknowledges receipt of, and extends thanks for, the Examiner's consideration of this Application provided in the Office Action dated October 26, 2009. In response thereto, this Amendment and accompanying remarks are submitted under 37 C.F.R. 1.111. Reconsideration of this Application is respectfully requested pursuant to 37 C.F.R. 1.111 and 1.112.

By the present Amendment, Claims 1-21, 23, 24 have been canceled and new Claims 26-49 have been submitted. Support for the amendments to the claims and for new Claims 26-49 may be found in numerous locations within Applicant's disclosure, as explained in more detail in section 1 of this response below. In light of this, a complete, analytical response to all of the points raised within the non-final Office Action dated October 26, 2009 is given in following.

1. Support for the Applicant's amendments:

None of the amendments introduce new matter.

New Claims 26-49: Support for the elements recited in these claims may be found at numerous locations throughout Applicant's original written description, drawings, and within canceled claims 1-25. Flexible tube, working head, guide wire, flexible transport screw, lateral opening, were originally claimed and are depicted in several drawing figures. Original description of the flexible transport screw was also given at paragraphs [0028], [0029] (numbering refers to publication of application as US20070219484). Support for new claim 27 may also be found in canceled claim 5; for new 28 in canceled 7; for new 29 in canceled 8; for new 30 in canceled 9; for new 31 in canceled 10; for new 32 in canceled 11; for new 33 in canceled 12; for new 34 in canceled 13; for new 35 in canceled 14; for new 36 in canceled 15; for new 37 in canceled 16; for new 38 in canceled 17; for new claim 39 in Fig. 76; for new claim 40 in canceled claim 18;

for new 41 in canceled 19; for new 42 in canceled 20; for new 43 in canceled 21; for new 44, 45 in canceled 23; for new 46 in canceled 24; for new 49 in canceled claim 4. New claims 26-49 present a newly ordered and cleanly typed claim set, from which it may more easily be understood that all of the extant claims 26-49, as now presented define over the prior art of record.

2. The previous rejection of Claims 1-2, 5-13, 18, 23-24 under 35 USC 103(a) over Straub et al(USP 5873882) in view of Kocak(USP4705511) :

This ground of rejection is overcome by the present Amendment, as Applicant has canceled claims 1-2, 5-13, 18, 23-24. The new claims include independent claims 26, 47, and 48, all of which may be readily seen to define over Straub et al taken alone, in view of Kocak, or in view of any of the remaining references of record applied in the October 26, 2009 Office Action. Independent claims 26, 47, 48 recite a flexible transport screw having a distal end configured to rotate relative to the end wall and having a distal helix part with external diameter fitting the diameter of the working head cylindrical bore to rotate therein in contact therewith so that the sharp edges of the helix in contact with the internal edges of the lateral opening shear and comminute material. Straub et al USP5873882 had a markedly different head, as is clearly understandable from Fig. 6 thereof, and accompanying description therein. As shown there, stator 14 is fastened to tubular flexible sheath 22 and has a generally static role. It has no end wall capping a cylindrical bore at a distal end, because the helical drive shaft 32 extends all the way therethrough as clearly shown in Fig. 7 of Straub. This helical drive shaft 32 is connected to an external rotor 16 as described "fixed to [the rotor 16] in terms of rotation" (see column 4, lines 2-25, Fig. 7 Straub et al). The resulting system is one in which an external rotor 16 has cutting edges that, in cooperation with cutting edges of stator 14 cut stenoses and blood clots. The Straub drive shaft 32 is not a cutting tool, and it passes all the way through the stator 14 to connect to external rotor 16 so as to drive it around the stator 14. It does not rotatably abut any end wall (none extant) capping a distal end of stator. Thus Straub et al (US5873882) fails to meet these claim limitations which are identically found in all of the independent claims 26, 47, 48.

None of the other references that were applied in the October 26, 2009 Office Action are curative. Kocak (USP4705511) in no way cures these deficiencies of Straub relative to the independent claims 26, 47, 48, as it does not show or suggest a working head. Similarly, Cohen (USP6217565) was cited by the Examiner only in relation to tube reinforcements. Evans et al(USP5312425) does not disclose a rotor/stator system analogous to Straub et al; in Evans et al, a helical cutting member 72 is attached to a bearing 90, and the configuration includes a circular cutting blade 82. Finally, Sjostrom (US-A-20030114875) is similarly deficient as there is not any working head with end-wall capping cylindrical bore, as claimed in new independent claims 26, 47, 48; furthermore, there is no groove-like bottomed recess as claimed in new claim 36.

In summary, new independent claims 26, 47, 48 define over Straub et al taken either alone or in view of any of the remaining references of record applied by the Examiner in the October 26, 2009 Office Action. Dependent claims 27-46 depend on and incorporate the limitations of independent claim 26 and are likewise allowable for the same reasons. Dependent claim 49 depends on and incorporates the limitations of independent claim 48 and is likewise allowable for the same reasons as claim 48.

3. The rejections of Claims 3-4, 14-17, 19-21 under 35 USC 103(a):

For the reasons explained above, these various rejections are also overcome by the present Amendment canceling claims 3-4, 14-17, 19-21.

4. New Claims 26-49 define over all of the remaining references of record:

New independent claims 26, 47 and 48 define over the remaining references of record. None of these references disclose, suggest, nor provide any reasoning leading to a catheter with a working head, guide wire, flexible transport screw, and flexible screw with the particular arrangements claimed in these claims.

Jacobs (USP5084052), Thimsen et al (USP4844064), Charleux (EP0582533), and Banko (USP3732858) fail to disclose, suggest, nor provide any reasoning leading to a catheter with working head, flexible tube distal end connected to a recess in working head proximal end, helical spring encased in thin-walled plastic sheath, guide wire extending through tube and out of a hole in the working head end wall as recited in independent claims 26, 47, 48. Brown et al (USP5417703) fails to disclose a working head and flexible transport screw extending from tube proximal end to working head distal end, as well as helically extending transport surfaces.

Kelly et al (USP5571122) fails to disclose, suggest, nor provide any reasoning leading to a working head as claimed. Evans (USP5226909) appears essentially cumulative to previously discussed Evans (USP5312425). Nixon (USP5100426), Dance et al (USP5078723), Bundy et al (USP4935025), and Stevens et al (USP4857046) all fail to disclose, suggest, nor provide any reasoning leading to a working head and flexible transport screw as claimed.

Similarly, WO02/049690, WO00/54659, WO94/24941, EP0739603, EP0669106, EP0680730, EP0448859, EP0267539, and WO91/01114 all fail to disclose, suggest, nor provide any reasoning leading to a working head and flexible transport screw as claimed.

Accordingly, independent claims 26, 47 and 48, and consequently their respective dependent claims 27-46 and 49 that depend on and further limit them, are all allowable over the references of record.

CONCLUSION

All of Claims 26-49 as currently presented now stand in condition for allowance, and favorable notice of allowability and passage of this Application towards issuance are respectfully solicited. Entry of this Amendment and accompanying remarks into the record is respectfully requested. No extension of time fees are believed due or necessary to accompany this response to the October 26, 2009 Office Action. In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 11-0223).

If the Examiner believes that there are unresolved issues requiring adverse final action in any of the claims now pending in the Application, it is requested that the Examiner telephone Applicant's representative at (732)634-7634 so that appropriate arrangements can be made for the resolution of such issues as expeditiously as possible.

Respectfully submitted,

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